

1-9. (CANCELED)

10. (NEW) A transmission (8) having a transmission case (26), the transmission comprising an area in which gear wheels (66, 68) rotate, and a heat exchanger (30), the heat exchanger (30) absorbs heat generated in the transmission (8), transfers the heat to a transmission lubricant and conveys the heat to a coolant to transport the heat away from the transmission (8), a recess (56) through which the transmission lubricant flows and in which the heat exchanger (30) is arranged is provided in the transmission case (26) outside of the area in which the gear wheels (66, 68) rotate,.

11. (NEW) The transmission (8) of claim 10, wherein the heat exchanger (30) is a separate component that can be inserted in the recess (56) in the transmission case (26).

12. (NEW) The transmission (8) of claim 10, wherein the transmission lubricant flows through the recess (56) in the transmission case (26) at an intake side of an oil pump (62) transporting the transmission lubricant.

13. (NEW) The transmission (8) of claim 10, wherein a bypass valve (70) enables the heat exchanger (30) to be bypassed when the temperatures of the transmission lubricant drops below a specified limit, is provided at an intake side of an oil pump (62) transporting the transmission lubricant.

14. (NEW) The transmission (8) of claim 10, wherein the heat exchanger (30) in the recess (56) is accessible from outside of the case (26) for maintenance and assembly purposes.

15. (NEW) The transmission (8) of claim 10, wherein the heat exchanger (30) is configured as a tubular heat exchanger.

16. (NEW) The transmission (8) of claim 10, wherein the coolant is connected to a cooling unit (38) outside the transmission (8) for the purpose of transporting away the heat from the transmission (8).

17. (NEW) The transmission (8) of claim 10, wherein the coolant used to transport away the heat from the transmission (8) is a coolant in the cooling system of an internal combustion engine (4) that drives the transmission (8).

18. (NEW) The transmission (8) of claim 10, wherein the coolant is a water-based fluid and the transmission lubricant is an oil-based fluid.